MATE-2403/2203/1903

24"/22"/19" LCD

Intel® Core™ i7 Quad Core Processor

Medical AIO

MATE-2403/MATE-2203/MATE-1903 Manual 1st Ed
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- Microsoft$^®$ Windows is a registered trademark of Microsoft$^®$ Corporation.

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Packing List

Before you begin installing your Medical Station, please make sure that the following items have been shipped:

- MATE-2403/2203/1903 Smart View Medical Station
- Medical Power Adapter 120W/12Vdc
- Utility DVD-ROM, which contains Drivers and Utilities

If any of these items are missing or damaged, you should contact your distributor or sales representative immediately.

Headquarters

Onyx Healthcare Inc.

2F, No.135, Lane 235, Pao-Chiao Rd.,

Hsin-Tien City, Taipei 231, Taiwan, R.O.C.

TEL: +886-2-8919-2188

FAX: +886-2-8919-1699

E-mail: sales@onyx-healthcare.com

http://www.onyx-healthcare.com

Worldwide Offices:

Onyx Healthcare, USA Inc.

324W. Blueridge Ave., Orange,, CA 92865, USA

Tel : +1-714-792-0774

Fax: +1-714-792-0481

Email: usasales@onyx-healthcare.com

Onyx Healthcare EUROPE B.V.

Primulalaan 42, 5582 GL Waalre, Netherlands

Tel : +31(0)499-745600

Email: eusales@onyx-healthcare.com

Onyx Healthcare (Shanghai) INC.

20F, unit D, GEM Building, No. 487 Tianlin Road,

Shanghai, China

Tel: +86-021-64956588

Fax: +86-021-64956889

Email: cnsales@onyx-healthcare.com

Safety & Warranty

1. Read these safety instructions carefully.

2. Keep this user's manual for later reference.

3. Disconnect this equipment from any AC outlet before cleaning. Do not use liquid or spray detergents for cleaning. Use a damp cloth.

4. For pluggable equipment, the power outlet must be installed near the equipment and must be easily accessible.

5. Keep this equipment away from humidity.

6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall could cause damage.

7. The openings on the enclosure are for air convection. Protect the equipment from overheating. DO NOT COVER THE OPENINGS.

8. **Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.**

9. **Warning: To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth.**
   (Avertissement: Pour éviter tout risque de choc électrique, cet appareil doit être connecté à une alimentation secteur avec une prise de terre)

10. Position the power cord so that people cannot step on it. Do not place anything over the power cord.

11. All cautions and warnings on the equipment should be noted.

12. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient over-voltage.

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13. Never pour any liquid into an opening. This could cause fire or electrical shock.

14. **Never open the equipment. For safety reasons, only qualified service personnel should open the equipment.**

15. **Warning: Do not modify this equipment without authorization of the manufacturer. (Avertissement: Ne pas modifier cet équipement sans l'autorisation du fabricant)**

16. **Warning : It is necessary for checking or replacing the battery pack every year. (Avertissement: Il est nécessaire de vérifier ou de remplacer la batterie chaque année)**

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16. **If any of the following situations arises, get the equipment checked by service personnel:**

   a.   The power cord or plug is damaged.

   b.   Liquid has penetrated into the equipment.

   c.   The equipment has been exposed to moisture.

   d.   The equipment does not work well, or you cannot get it to work according to the users manual.

   e.   The equipment has been dropped and damaged.

   f.   The equipment has obvious signs of breakage.

17. **DO NOT LEAVE THIS EQUIPMENT IN AN UNCONTROLLED ENVIRONMENT WHERE THE STORAGE TEMPERATURE IS BELOW -20°C (-4°F) OR ABOVE 60°C (140°F). IT MAY DAMAGE THE EQUIPMENT.**

18. **External equipment intended for connection to signal input/output or other connectors, shall comply with relevant UL / IEC standard (e.g. UL 1950 for IT equipment and ANSI/AAMI ES 60601-1: 2005 AND CAN/CSA-C22.2 No. 60601-1:08 / IEC 60601 series for systems – shall comply with the standard IEC 60601-1-1, Safety requirements for medical electrical systems. Equipment not complying with UL 60601-1 shall be kept outside the patient environment, as defined in the standard.**

Caution:

   It may cause the danger of explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacturer.

Classification

1. Degree of production against electric shock: not classified

2. Degree of protection against the ingress of water: IPX1

3. Mode of operation: Continuous

4. Type of protection against electric shock: Class I equipment
5. No Applied Part, No AP/APG

FCC

Warning!

This device complies with Part 18 FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

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UL Module Description

	MATE-2403/2203/1903 modules are developed to suitable for the Classification Mark requirement

Safety Symbol Description

The following safety symbols are the further explanations for your

reference.

CLASSIFIED c (UL) US	*Medical equipment with respect to electric shock, fire and mechanical hazards only in accordance with **ANSI/AAMI ES 60601-1: 2005 AND CAN/CSA-C22.2 No. 60601-1:08***
	Attention, consult ACCOMPANYING DOCUMENTS.
	Stand-by
	Ground wire Protective Ground wire.

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Chapter

1

General Information

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1.1 Introduction

MATE-2403/2203/1903 Smart View Medical Stations are based on Intel$^®$ 6th Generation Core^{TM} i7 Quad Core processor, which delivers a performance improvement of more than 100 percent compared to systems running traditional single-core processors. With four cores, or computing engines, ONYX can simultaneously execute four computing tasks. It accommodates one 2.5" SATA hard disk drive/SSD and two DDR4 SODIMM up to 32GB.

The high brightness LCD, Low Noise solution, integrated multimedia functions and extensive expansion options make them the perfect platform upon which to build comprehensive lifestyle

computing applications.

MATE-2403/2203/1903 include all the features of a powerful computer into a slim and attractive chassis. MATE-2403 has a 24" 250 nits TFT display with 1920 x 1080 resolutions. MATE-2203 has a 22" 250 nits TFT display with 1920 x 1080 resolutions. MATE-1903 has a 19" 250 nits TFT display with 1280 x 1024 resolutions. Integrating with high brightness LCD is easier to analyze DICOM image. MATE series owns side mount USB 2.1 ports, slim DVD-RW drive and a smart card reader to support high speed data transfer and ID check by smart card reader. Combining MATE-2403/2203/1903 into your system can achieve both cost-saving and efficient improvements in common applications

including Surgical, Radiology, PACS (Picture Archiving Communication Systems), LIS (Lab Information Systems) and Electronic Medical Record. MATE-2403/2203/1903 are definitely your perfect choices.

1.2 Feature

- 24"/22"/19" Intel$^®$ Core^{TM} i7 Quad Core Processor

- Supports Dual Channel DDR4 SODIMM up to 32GB

- Built-in RFID and Smart Card Security (optional)

- Supports One PCI Express Expansion(optional)

- Four High Speed USB 3.0 Ports

- Dual Color Function Keys

1.3 Specification

Hardware Specifications

Display	MATE-2403: 24" 1920x1080 LCD
	MATE-2203: 22" 1920x1080 LCD
	MATE-1903 19" 1280x1024 LCD
CPU	Intel® Core™ i7/i5/i3 Processor
Disk Drive Space	2.5" Hard Disk Drive/Solid State Drive
	Slim DVD-RW Drive (optional)
Expansion	One PCI Express[x1](optional)
Function Key	Power On/Off, Speaker Volume Up/Down, LCD Brightness Up/Down, LCD On/Off, Touch Screen On/Off, Reading Light On/Off
Bottom I/O	4x USB 3.0 port
	2x Gigabit LAN
	2x RS-232 port
	1x DisplayPort/1x HDMI
	Line-out/Mic
Side I/O	2x USB 2.0 port

LCD Specifications

Model Name	MATE-2403 series	MATE-2203 series
Display Type	24" LCD	22" LCD
Max. Resolution	1920 x 1080	1920 x 1080
Max. Colors	16.7M	16.7M
Pixel Pitch (um)	0.274 x 0.274	0.248 x 0.248
Luminance (cd/m2)	250(TYP)	250 (TYP)
Back Light Life Time	30,000 Hrs	30,000 Hrs

Model Name	MATE-1903 series
Display Type	19" LCD
Max. Resolution	1280 x 1024
Max. Colors	16.7M
Dot Size (mm)	0.294 x 0.294
Luminance (cd/m2)	250(TYP)
Back Light Life Time	30,000 Hrs

Note:

All ONYX LCD products are manufactured with High precision technology. However, there are a small number of defective pixels in all LCD panels that are not able to change color. This is a normal occurrence for all LCD displays from all manufacturers and should not be noticeable or objectionable under normal operation. All LCD panels are qualified for industry standard conditions in the following: total 7 dead pixels on a screen or if there are 3 within 1 inch square area of each other on the display.

Mechanical Specifications

Architecture	Close-frame
Front Bezel	Plastic bezel with resistive touch screen
Color	White
Mounting / Holder	VESA 75/100mm, Screw type:M4*8mm
Construction	3mm ABS + PC TYPE Plastic housing
Dimension (WxHxD)	MATE-2403: 600mmx 415mm x 65 mm MATE-2203: 546mm x 351mm x 66mm MATE-1903: 450mm x 388mm x 66mm
Net Weight	MATE-2403: 21.4 lb (9.7 Kg) MATE-2203: 17.6 lb (8.0 kg) MATE-1903: 16.5lb (7.5Kg)

Power Supply Specifications

Model	Adapter ATM120-P120
Input Voltage	100-240V AC, 2-1A @ 50-60 Hz
Output Voltage	12V, 10A, 120W max.
MTBF	300,000 hrs operation at 25˚C

Model	EDAC EM11011H
Input Voltage	100-240V AC, 2-1A @ 50-60 Hz
Output Voltage	12V, 10A, 120W max.
MTBF	100,000 hrs operation at 25˚C

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Environmental Specifications

Operating Temperature	0˚C to 35˚C (32˚F ~95˚F)
Operating Humidity	30% to 75% RH, non-condensing
Operating Pressure	700 to 1033 hPa
Storage Temperature	-20˚C to 60˚C (-4˚F ~140˚F)
Storage Humidity	10% to 90% RH, non-condensing
Storage Pressure	700 to 1033 hPa
Vibration	0.5G / 5 ~ 500Hz (Random) / operation
Shock	15G peak acceleration (11 msec. duration) / operation
Drop	76cm (1 Corner, 3 Edge, 6 Surface)
EMI / Safety	CE / FCC Class B/ANSI AAMI ES60601-1/ EN 60601-1
Noise	0db (full operation)

Touch Screen (Optional)

Type	Projective Capacitive / 5-wire Resistive
Interface	USB interface
Light Transmission	> 75%
Life Time	35 million activations

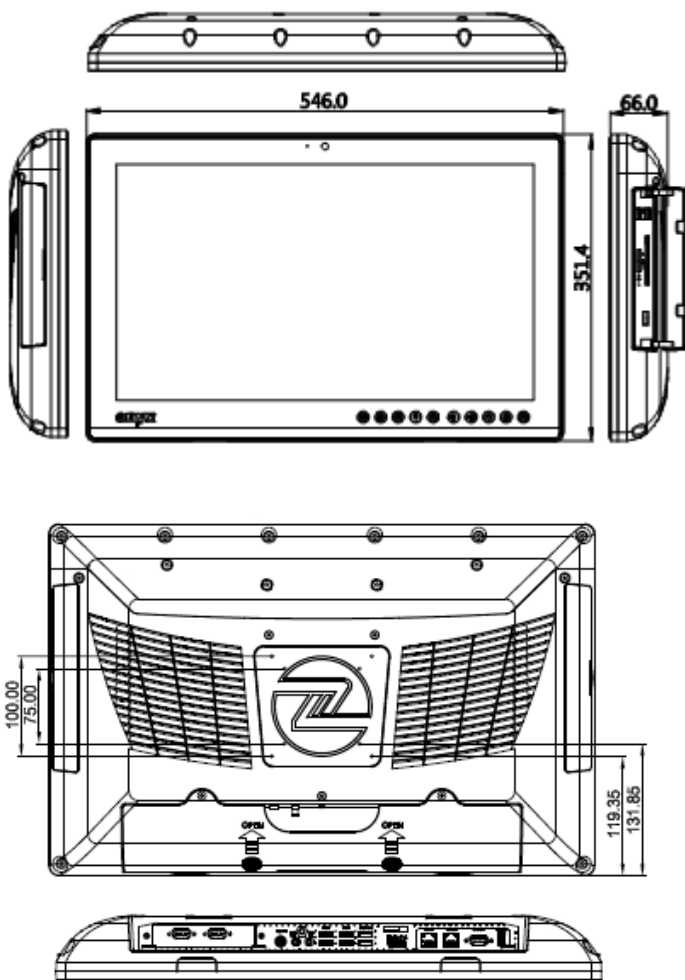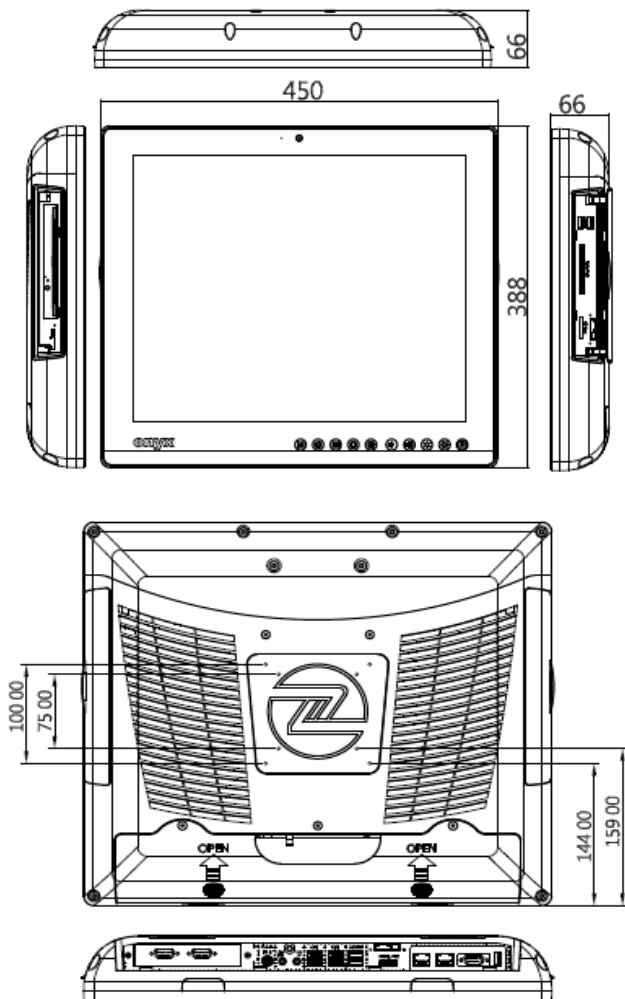## 1.4 Dimension

MATE-2403
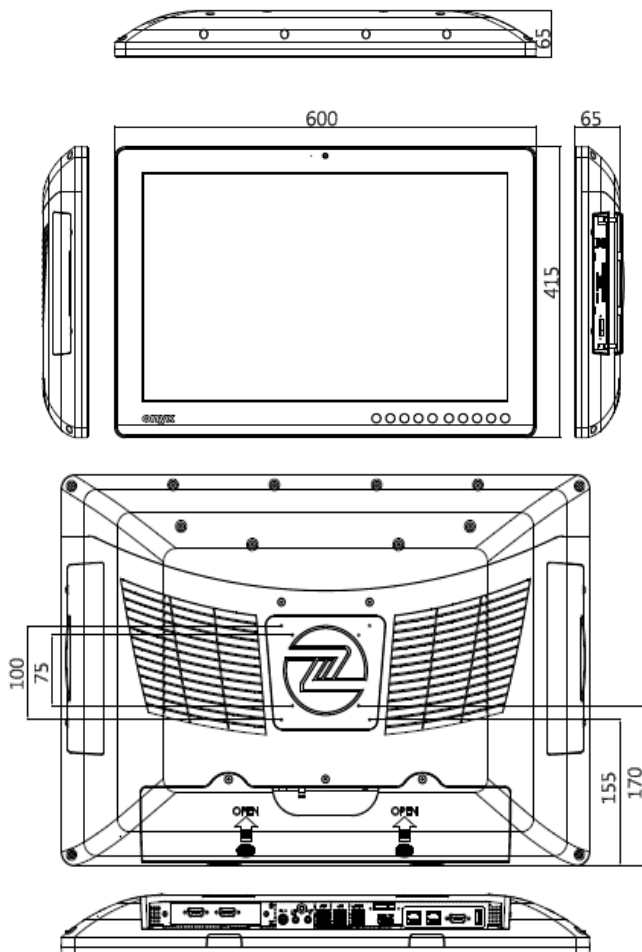
MATE-2203

MATE-1903

Chapter

2

Hardware
Installation

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2.1 Safety Precautions

Warning!

Always completely disconnect the power cord from your board whenever you are working on it. Do not make connections while the power is on, because a sudden rush of power can damage sensitive electronic components.

Caution!

Always ground yourself to remove any static charge before touching the board. Modern electronic devices are very sensitive to static electric charges. Use a grounding wrist strap at all times. Place all electronic components on a static-dissipative surface or in a static-shielded bag when they are not in the chassis

2.2 Quick Tour of the MATE-2403/2203/1903

There are 9 control buttons in the front side of MATE-2403/2203/1903. Please refer to table 2.1 for the function of each button.
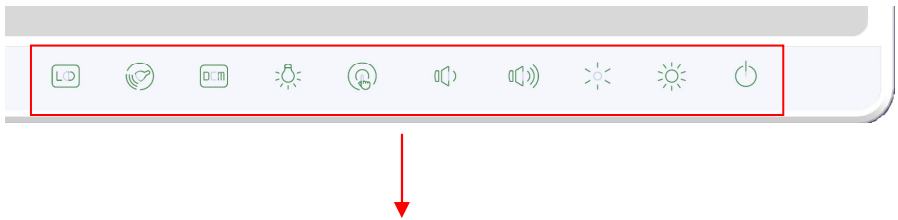
Control Buttons

Picture 2.1: Front View of the MATE-2403/2203/1903 Series

Control Button	Function
	Press 2 seconds to turn on the power
	Increase LCD brightness
	Decrease LCD brightness
	Increase speaker volume
	Decrease speaker volume
	Enable/Disable Touch Screen
	Enable/Disable Reading Light
	Enable Barcode Scanner
	Enable/Disable LCD

Table 2.1: Functions of Control Buttons

The sunken I/O section is at the bottom, as shown in Picture 2-2.

MATE-2403

Gigabit LAN x 2
USB 3.0 x 4
DC Input   COM Port x 1   Mic in
COM Port x 1   DP x 1   Line out
HDMI x 1
Reading Light

MATE-2203

Gigabit LAN x 2
USB 3.0 x 4
COM Port x 1   Mic in
DC Input
COM Port x 1   DP x 1   Line out
HDMI x 1
Reading Light
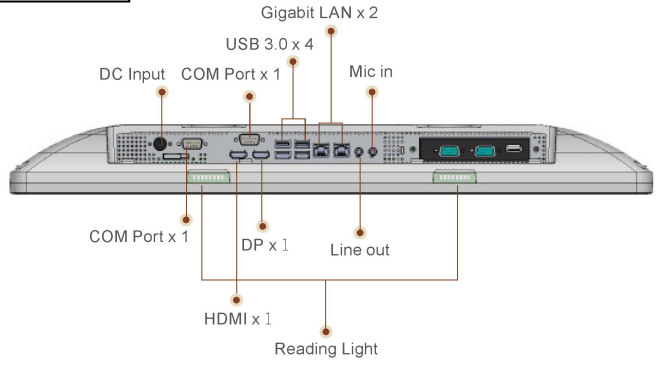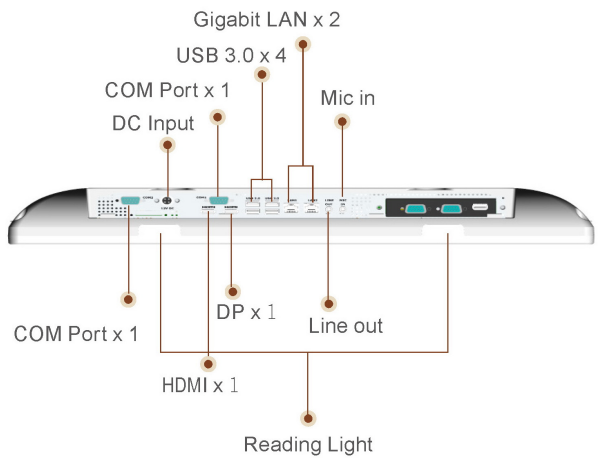
MATE-1903

Picture 2.2: Rear view of the MATE-2403/2203/1903 Series

When you turn MATE-2403/2203/1903 around, two USB 2.0 ports and the smart card reader are on the right side and DVD-RW drive is on the left side as shown in Picture 2-3.

Picture 2.3: Right and Left View of MATE-2403/2203/1903

2.3 Turn On and Boot up into Windows OS

This section is for Windows operating system only. If you are installing a different operating system, please contact your vendor for installation details.

Your MATE will begin loading Windows OS once you push the power button to turn power on. After less than one minute, Windows desktop screen will appear.
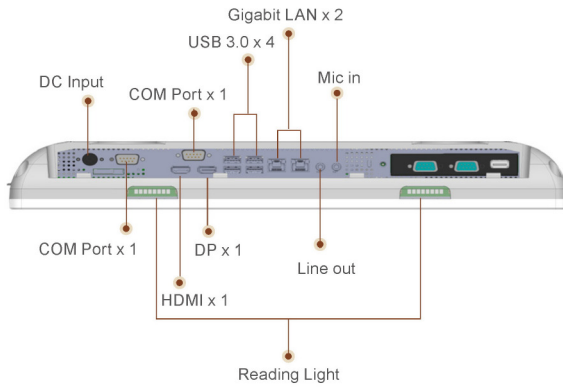
You can select the programs from the start menu in the left-down corner of the desktop screen.

2.4 Turn off

Turning off MATE properly is important for system reliability. There are two ways to turn off the system.

1. On the start menu, click "shut down" and select "OK"
2. Push the power button and then the system will shut down automatically

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Chapter

3

Driver

Installation

There are several installation ways depending on the driver package under different Operating Systems.

Please follow the sequence below to install the drivers:

For Windows 7/8/10

Step 1 – Chipset Driver

Step 2 – Graphics Driver

Step 3 – Realtek LAN Driver

Step 4 – Realtek Audio Driver

Step 5 – TPM 2.0 Driver(for Windows 7)

Step 6 – ME Driver

Step 7 – USB 3.0 Driver

Step 8 – Serial Port Driver

Step 9 – Resistive Touch Screen Driver(only for ET series)

Appendix

A

Miscellanea

A.1 General Cleaning Tips

You may need the following precautions before you begin to clean the computer. When you clean any single part or component for the computer, please read and understand the details below fully.

1. Never spray or squirt the liquids directly onto any computer component. If you need to clean the device, please rub it with a piece of dry cloth.
2. Be cautious of the tiny removable components when you use a vacuum cleaner to absorb the dirt on the floor.
3. Turn the system off before you start to clean up the component or computer.
4. Never drop the components inside the computer or get circuit board damp or wet.
5. Be cautious of all kinds of cleaning solvents or chemicals when you use it for the sake of cleaning. Some individuals may be allergic to the ingredients.
6. Try not to put any food, drink or cigarette around the computer.
7. ONYX Healthcare Inc. has tested and verified these cleaning disinfectants, CIDEX, Viraguard, Control III Disinfectant Germicide, Caviwipes, Dispatch Disinfectant Cleaner CLH69101, Puregreen 24 Disinfectant, can be used with the MATE-2403/MATE-2203/MATE-1903. Use of any other disinfectants will void the warranty.

A.2 Cleaning Tools

Although many companies have created products to help improve the process of cleaning your computer and peripherals users can also use household items to clean their computers and peripherals. Below is a listing of items you may need or want to use while cleaning your computer or computer peripherals.

Keep in mind that some components in your computer may only be able to be cleaned using a product designed for cleaning that component, if this is the case it will be mentioned in the cleaning tips.

- **Cloth** - A piece of cloth is the best tool to use when rubbing up a component. Although paper towels or tissues can be used on most hardware as well, we still recommend you to rub it with a piece of cloth.
- **Water or rubbing alcohol** – You may moisten a piece of cloth a bit with some water or rubbing alcohol and rub it on the computer. Unknown solvents may be harmful to the plastics parts.
- **Vacuum cleaner** - Absorb the dust, dirt, hair, cigarette particles, and other particles out of a computer can be one of the best methods of cleaning a computer. Over time these items can restrict the airflow in a computer and cause circuitry to corrode.
- **Cotton swabs** - Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas in your keyboard, mouse, and other locations.

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- **Foam swabs** - Whenever possible it is better to use lint free swabs such as foam swabs.

<u>**Note:**</u>

We strongly recommended that you should shut down the system before you start to clean any single components.

Please follow the steps below.

1. Close all application programs.
2. Close operating software.
3. Turn off power switch
4. Remove all device
5. Pull out power cable

A.3 Scrap Computer Recycling

If the computer equipments need the maintenance or are beyond repair, we strongly recommended that you should inform us as soon as possible for the suitable solution. For the computers that are no longer useful or work well, please contact with worldwide distributors for recycling.

The worldwide distributors show on the following website:

http://www.onyx-healthcare.com.tw/Contact.php

Note:

Follow the national requirement to dispose unit